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Social Integration and Canadian Provincial Crime Rates: The Impact of Geographic Mobility

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DISCUSSION PAPER 21

SOCIAL INTEGRATION AND CANADIAN PROVINCIAL CRIME RATES: THE IMPACT OF GEOGRAPHIC MOBILITY*

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ABSTRACT

Geographic mobility as a potentially disintegrative force generating high crime rates in social units has not received a great deal of research attention. The present analysis investigates the effects of such mobility on Canadian provincial crime rates which quite consistently exhibit an east-west trend. Multiple regression techniques are used to assess the effect of geographic mobility on violent, violent property and property crime rates net of several other potential predictors. A positive net effect of geographic mobility varies by type of crime, being strongest for violent personal crime while very weak for violent property crime.

INTRODUCTION

A concern with the possibly criminogenic consequences of a decrease in social integration has long held a central position in the literature of criminology. Durkheim is usually cited as an exemplar of this concern with his interest in the effects of social change on social stability and cohesion (Messner, 1982). In his study of suicide Durkheim (1951/1897) used the concept of social integration to explain societal differences in the incidence of suicide as a function of a society's ability to provide and sustain institutional features binding individuals to the collectivity (Trovato, 1986). Thus social integration was conceptualized as mediating the effects of social change on suicide and, by extension, crime.

The potentially destabilizing effects of rapid change was a focus of the Chicago School of sociology early in this century. Wirth (1938) argued that demographic changes in the size, density and heterogeneity of a population altered the structure of social relations within it; the social ties among individuals became more impersonal, transitory, formally regulated and normatively diverse with increasing size, spatial concentration and diversity of background. This resulting "urbanism" was thought to weaken social integration and informal social control, with a variety of alledgedly deleterious effects. Shaw and McKay (1942) took up this theme in their conceptualization of neighborhood social disorganization and weakened social control mediating the effects of ecological change and community characteristics on delinquency rates (Kornhauser, 1978). Their work spawned a long tradition of research which continues to the present (Reiss and Tonry, 1986; Sampson, 1985; Bursik, 1988). One aspect of social integration which has not received much research attention is that of geographic mobility. While the criminality of migrants has been of some interest (Savitz, 1960; Kinman and Lee, 1966; Green, 1970; Tilly, 1970; Tittle and Paternoster, 1988), the potentially disintegrative effects of highly mobile populations have not been emphasized in criminological research. However, Tittle and Paternoster (1988) have recently reiterated the distinction between these micro and macro aspects of the connection between geographic mobility and crime. They concluded that much remains to be learned about the effects of mobility rates on the overall amount or rates of crime in social units and regarded as quite plausible the hypothesis "that high rates of geographic mobility in a community or social unit could lead to poor community integration and weak social control that might, in turn, generate high rates of crime or deviance independent of whether individual movers were more or less likely to engage in crime or deviance than nonmovers (1988:325)."

Clinard (1974) has maintained that mobility tends to weaken attachments to the local community, to make persons less interested in maintaining community standards, and to increase contact with secondary groups of diverse normative patterns, thus weakening social bonds that help provide the basis for social control. In commenting upon Wirth's (1938) urbanism hypothesis, Wilenski and Lebeaux (1958) noted that the traditional view claimed that the greater mobility of urban areas necessitated many contacts with others known only superficially in impersonal, transitory relationships. This supposedly contributed to the weakening of the informal social controls of primary groups. However, these authors cautioned that increased mobility wasn't necessarily disruptive and may become routine, and that primary group relations persisted and primary group controls remained effective. They also referred to Lander's (1954) research in concluding that areas of high mobility didn't necessarily exhibit high delinquency rates. However, Lander's results have been called into question by Gordon's (1967) critique. In a study of large cities, Angell (1951) found that moral integration (measured by low crime rates and a strong social welfare effort) was lowest in cities with highly mobile populations, that were ethnically and racially heterogeneous and where inequality was high. Also, Clinard and Abbott's (1973) African research demonstrated that migration from rural areas to cities was associated with a breakdown of traditional tribal relations and increased crime. Furthermore, in an urban slum area with less mobility there was also less crime.

The most recent research concerning the effects of geographic mobility on the crime rates of the 65 largest U.S. Standard Metropolitan Statistical Areas (SMSAs) was reported by Crutchfield, et al. (1982). They hypothesized that environments with higher rates of geographic mobility would manifest weaker social integration with resulting higher crime rates. Communities with very mobile populations would be subject to breakdowns in their relational structures since the costs of maintaining special contacts over long distances mean that the greater the degree of population mobility, the less permanence, depth of feeling and stability there will be in social relationships. These authors also suggested that higher levels of geographic mobility would make it more likely that neighbors would have diverse characteristics inhibiting the establishment of new friendship networks. A weakened relational structure would decrease the effectiveness of community informal social control mechanisms, resulting in higher crime rates. Crutchfield, et al.'s (1982) results were consistent with this contextual interpretation of the mobility–crime rate relationship, net of controls

TABLE 1

Canadian Provincial Crime Rates (per 100,000 population), 1962, 1972, 1982

	1962			1972			1982		
	Viol	Viol Prop	Prop	Viol	Viol Prop	Prop	Viol	Viol Prop	Prop
Newfoundland	137	356	914	397	535	1979	573	885	2805
PEI	119	190	517	314	408	1320	396	833	2728
Nova Scotia	234	310	884	388	632	1599	535	1017	3315
New Brunswick	116	268	579	344	648	1493	499	1069	2944
Quebec	102	443	1180	235	914	1835	286	1946	3506
Ontario	220	450	1583	526	836	3172	596	1329	4547
Manitoba	187	648	1744	406	1044	3372	612	1839	5605
Saskatchewan	245	437	1389	564	872	2985	596	1538	4968
Alberta	292	513	2090	705	1095	3918	793	993	5382
B.C.	340	791	2235	629	1546	4572	1012	2243	6557
NWT/Yukon	1143	672	1850	3568	1754	5626	2908	2763	6606
Canada	194	477	1477	581	1631	4507	581	1631	4507

for population size and measures thought to reflect restricted legitimate opportunities, but primarily for property rather than other crime types.

The present analysis investigates the effects of geographic mobility on Canadian provincial crime rates, thus extending the limited body of research on this question to another society and level of aggregation. Canadian provincial crime rates for a number of years have exhibited an east-west trend, with the Maritime provinces having relatively low rates while the Western provinces have high rates; Quebec usually displays rates that are somewhat lower than Ontario (Hackler and Don, 1987). These patterns persist for both violent and property crimes, with only occasional exceptions. Table 1 displays the provincial rates (per 100,000 population) of violent personal crime, property crime with violence, and non-violent property crime for 1962, 1972 and 1982. The usual east-west trend is readily observable for all three years and crime categories, though there are a few exceptions, particularly for property crime with violence.

Few attempts to account for Canadian provincial crime rate differences have been attempted. Using standardization procedures, Hartnagel (1978) was unable to observe much effect of age and sex composition of provincial populations on their conviction rates. Giffen (1965) reported that the ranking of provinces by rates of conviction was altered little by standardization for urbanization, although he did find a positive association between the ranking of the provinces by rates of indictable offenders and population increase from 1956-61 (.58), proportion of population in census metropolitan areas (.54), and proportion in cities of 30,000 and over (.53). In a subsequent report, Giffen (1976) found that the rates of adult indictable offenders for provinces was positively but insignificantly correlated with percentage urban in 1966 and population growth from 1961-66. But the provincial crime index rates for 1973 had a rank order correlation with percent urban in 1971 of .65, while the correlation with population growth from 1966-71 was only .46. Giffen concluded that the subject of provincial differences deserved further study with less rudimentary analysis. Finally, Bell-Rowbotham and Boydell (1972) only found a significant positive relationship between provincial ranking in urbanization in 1966 and 1969 and their ranking on police reports of robbery and theft.

HYPOTHESES

The major hypothesis to be tested in the present investigation is that the observed variation in provincial crime rates will be positively related to the

amount of provincial geographic mobility. Following the argument of Crutchfield et al. (1982), provinces exhibiting more geographic mobility should experience a lower degree of integration in their relational structures and hence a weakening of their informal mechanisms of social control, resulting in higher crime rates.

Furthermore, we expect this positive relationship between geographic mobility and crime to be maintained net of other variables known to be predictors of aggregate crime rates. Urban crime rates are generally higher than rural/small town rates (Harries, 1974; Nettler, 1984) and indeed much of the literature on social integration and crime has been focused upon urban communities. Furthermore, both Giffen (1965; 1976) and BellRowbotham and Boydell (1972) reported some relationship between provincial crime rates and their degree of urbanization. So we will control for differences in provincial urbanization. Crutchfield et al. (1982) also included measures of restricted legitimate opportunities and studies of regional variation in crime rates have usually demonstrated effects of economic deprivation variables (Ehrlich, 1973; Loftin and Hill, 1974; Braithwaite, 1979; Smith and Parker, 1980). Therefore, we will also control for differences in the economic well-being of provincial populations. Labelling, critical and deterrence theory all emphasize the role of the criminal justice system itself in influencing the level of officially recorded crime and various researchers have demonstrated such effects (Kitsuse and Cicourel, 1963; Wheeler, 1967; Swimmer, 1974; Jones, 1974; Land and Felson, 1976; Jacobs, 1979; Quinney, 1979). In Canada, McDonald (1969) reported that changes in the number of police per capita were positively related to particular measures of crime rates, generally for the less serious types. So we will also include a measure of provincial differences in police resources.

We will compare the effects of these several variables as predictors of three types of crime. The crime rates for the years 1962, 1972 and 1982 will be regressed on the predictor variables for 1961, 1971 and 1981, respectively, since it is unlikely that any of these predictors would have instantaneous effects. Furthermore, this design will also allow us to detect any significant period effects.

METHODOLOGY

The ten Canadian provinces and the Yukon/Northwest Territories (aggregated together) represent the units of analysis. Data from three time

periods (1961–62; 1971–72; 1981–81) were combined into a single file with an N of 33. Strictly speaking, these cases constitute the population, though they could be considered a sample representing all possible years. However, these particular years were not randomly selected. The Canadian census—the source for data on the independent variables—is conducted every ten years and 1961, 1971 and 1981 were census years.

Crimes known to the police in the provinces and territories are recorded in Crime Statistics (Statistics Canada, 1962; title later changed to Crime and Traffic Enforcement Statistics) for the years 1962, 1972 and 1982 were obtained to measure the dependent variable. These crimes were categorized into three types: violent personal crime, property crime with violence, and property crime without violence. A rate per 100,000 total population was calculated for each type.

A number of potential indicators for the independent variables were considered; however, these had to be restricted in order to avoid collinearity problems and to preserve degrees of freedom. Furthermore, we were restricted to measures available in the aggregate for all of the provinces and the Northwest Territories/Yukon. Although Statistics Canada defines urban as any community of 1000 or more, this hardly conforms to the conceptualization of urban in the social integration literature. However, Canada also has few huge metropolitan areas. So the percentage of the provincial population resident in centres of 100,000 or more population was chosen as the measure of provincial urbanization. The measurement of economic deprivation was restricted by the data available for provinces for the three census years and so the percentage of the provincial population below the census low income level was utilized as a type of poverty measure. Since the dependent variable was indexed by crimes known to the police, and since the police are the criminal justice system agents most likely to have an effect on this measure, the number of police per capita in 1962, 1972 and 1982 was obtained from Police Administration Statistics. The main predictor variable of geographic mobility was indexed by the rate of interprovincial migration; that is, the rate at which a province experiences migration from other provinces. Finally, each of the three census years was identified in the data file so that any potential period effects (i.e., 1961 to 1971 and/or 1971 to 1981) could be identified.

DATA ANALYSIS

Table 2 displays the matrix of intercorrelations among these variables, along with their means and standard deviations. Of the predictor variables, the urban population and the migration rate exhibit the greatest variability, with police per capita and percent low income having lower amounts. As Table 1 has already demonstrated, there is a good deal of variability among the provinces in their crime rates. Examining the correlation matrix, the crime rates are strongly interrelated, particularly the two property types. Among the predictor variables, the urban population is moderately and negatively correlated with the migration rate and the percentage of low income population, indicating that the more urbanized provinces have a somewhat lower percentage of their population in poverty and experience a lower degree of interprovincial migration. The migration rate is strongly correlated with police per capita (.706) such that we will have to be alert to the potentially disturbing effects of their collinearity when pursuing our multivariate analysis.

The migration rate and police per capita have the highest zero–order correlations with the three crime types. Both, but particularly the migration rate, are strongly and positively related to violent personal crimes; but both also exhibit moderately strong positive correlations with property crimes with and without violence. While the urban population variable is weakly and negatively related to violent personal crime, it shows a weak but positive relation with the two property crime types. The percent low income is unrelated to violent crime but weakly and positively related to property crimes with and without violence.

We also inspected the plots of these bi–variate correlations and identified a number of instances of outliers, most resulting from the extremely high crime rates of the Northwest Territories/Yukon. This can seriously affect the correlation and regression results, particularly with a relatively small number of cases as in the present research. Given this bivariate scatter, as well as the skewness of the crime rates, particularly for violent crime, and wishing to avoid any reduction in the number of cases, we decided to transform the dependent variables into their natural logarithm. So the hypothesis of a positive net effect of geographic mobility on provincial crime rates will be tested by regressing the log of each type of crime rate on the provincial migration rates, percent low income, percent urban, number of police per capita, and the year of data collection. The results of these regressions are displayed in Table 3. As can be seen, a substantial amount of the observed variation in the three crime

TABLE 2

Zero-Order Correlations, Means and Standard Deviations

	1	2	3	4	5	6	7	$\bar{X}$	SD
1. Migration	----	-.307	.009	.706	.867	.479	.558	6.41	5.18
2. Urban		----	-.323	-.097	-.250	.219	.291	29.22	23.73
3. Low Income			----	-.006	.073	.249	.257	35.69	9.99
4. Police Per Cap				----	.747	.656	.580	1.83	.89
5. Violent Crime					----	.649	.649	607	726
6. Violent Prop Crime						----	.915	964	611
7. Prop Crime							----	2903	1745

TABLE 3

Multiple Regression of Log of Crime Rates on Five Predictors

	Predictor	Beta	R^2_{ADJ} = .836	SE = .326	
Violent	Urban	.1828			
	Year	.1986	ANOVA		
	Police	.2927		DF	Sum of Sqs.	Mean Sq.
	Migration	.6118	Regress	5	17.778	3.556
	Low Income	.1661	Residual	27	2.862	.106
Viol Prop	Urban	.3614	.815		.275	
	Year	.5899				
	Police	.3162				
	Migration	.1905		5	11.014	2.203
	Low Income	-.0134		27	2.044	.076
Property	Urban	.4487	.843		.268	
	Year	.5968				
	Police	.1132				
	Migration	.3986		5	12.694	2.539
	Low Income	-.0039		27	1.935	.072

categories can be accounted for by these five predictors. However, the pattern of net effects of these predictors varies by the type of crime. The hypothesis of a positive net effect of the migration rate is confirmed for violent personal crime and property crime without violence; but the migration rate has very little net effect on property crimes with violence. Furthermore, while the migration rate is by far the strongest net predictor of violent personal crime, it makes a less substantial contribution to the prediction of non-violent property crime compared to the percent urban population and time period effects. The only predictor variable to have much of an effect on violent personal crime, in addition to the migration rate, is the number of police per capita; as their number increases so does the known violent crime rate. Police per capita also exhibits a moderate positive effect on the violent property crime rate but little effect on non-violent property crime. There are substantial time period effects for both types of property crime but not for violent crime; net of other effects, violent and non-violent property crime increased substantially over the twenty-year time period 1961 to 1981. This period effect is stronger than that of any of the other predictor variables considered here. Similarly, provincial urbanization has moderately positive net effects on the two types of property crime but not on violent personal crime. But percent low income has no net effect on property crimes and very little on violent crime.

The residuals from these regressions were obtained and analyzed. While their distributions were not exactly normal, no extreme cases were observed and the deviations in the normal probability plots were not large. The standardized scatterplots exhibited no observable pattern and the equality of variance assumption did not appear to be violated. These residual results confirm our decision to make a logarithmic transformation of the dependent variables prior to conducting the regressions. We also used the backward elimination procedure in repeating each of these three regressions in order to check on any potential multicollinearity problems. While the relative magnitude of the partial regression coefficients was altered somewhat by this procedure, in each case the variable with the largest net effect was identical to what appears in Table 3. Furthermore, the pattern of results was the same as described above, with only one exception. With violent personal crime dependent, year remained as the second strongest net predictor (.3550) after migration rate (.5386) and with police per capita (.2715), while urban population and percent low income were eliminated. When violent property crime was the dependent variable, migration and percent low income were eliminated and urban population (.3213) followed police per capita (.4508) and year (.5782) as the predictors included in the

equation. Finally, with non-violent property crime dependent police per capita and percent low income were eliminated while year (.6150), migration rate (.4786) and urban population were included. So these results largely confirm those reported in Table 3 and give no indication of any multicollinearity problems.

DISCUSSION

These results give some support to the hypothesis that provincial differences in crime rates are at least partly a function of differences in the amount of geographic mobility experienced in different provinces. This result appeared for two of the three categories of crime—violent personal and nonviolent property—and net of controls for four other potential predictors. In line with previous interpretations of the effect of geographic mobility, these findings suggest that higher provincial rates of geographic mobility produce a weakening of the structure of social relations, with a consequent decline in the power of informal social controls resulting in higher crime rates. However, this and previous aggregate level research on geographic mobility and crime can only infer the presence of these intervening mechanisms; more direct evidence for their presence and operation must come from local community (e.g., Clinard and Abbott, 1973; Maccoby, et al., 1958) and individual level (e.g., Tittle and Paternoster, 1988) research. But our results certainly add to the previous evidence of Crutchfield, et al. (1982) for this type of argument.

However, as we noted, the effect of geographic mobility net of other predictors appears to vary by the category of crime: it is strongest for violent personal crime and largely absent for violent property crime, but moderately strong for non-violent property crime. The violent personal and non-violent property crime types are fairly broad categories including a range of specific offences. However, the violent property crime category is constituted by only two offences, robbery and break and enter. While it is true that robbery and break and enter offences differ both between themselves as well as within each type, they do share a greater instrumental character when compared to many violent personal crimes as well as many petty and non-violent property offences. So perhaps such instrumental crimes as robbery and break and enter are not the product of social disruption and weakened controls brought about by geographic mobility, but rather reflect the structure of opportunities (Cohen and Felson, 1979) required for these acts to be committed. Thus the ready availability of suitable targets may be more central to these crimes than the

weakening of social integration.

The moderately strong effect of urban population on violent property crime may represent some aspects of this opportunity effect. That is, a larger, more densly congregated population may present more suitable targets, and perhaps more rewarding targets as well, while at the same time facilitating the evasion of detection through the greater anonymity of urban areas. Urban areas may also facilitate these types of crime by their provision of more criminal role models and opportunities for socialization into criminal subcultures. So provinces with a greater proportion of their population resident in urban areas perhaps produce higher property crime rates due to their structure of opportunities favoring these crimes rather than because of a weaker relational structure. And although some have argued that urbanization produces social disintegration, it is critical to distinguish between this version of a social change-social disorganization argument and the static, structure of opportunities interpretation presented here (Lodhi and Tilly, 1973). A static measure such as percent urban is, we believe, more likely to reflect such a structure; a more processually sensitive indicator, such as the change in the percent urban over a period of time, is probably required to measure the allegedly disorganizing consequences of urbanization. The negative correlation (-.307) we observed in Table 2 between percent urban population and the migration rate suggests in any event that they are not both measuring social disintegration.

Our lone indicator of economic deprivation—percent low income—failed to exert any sizeable influence on any of the crime categories. However, this is insufficient in our view to dismiss any possible role for economic deprivation in the explanation of provincial crime rates. While the precise role of economic factors remains controversial (Chiricos, 1987; Freeman, 1983; Wilson and Cook, 1985), a number of criminologists have argued that inequality and relative deprivation may be more important than low income or poverty in the causal dynamics of at least some crimes (Box, 1987; Braithwaite, 1979). Methodological issues have also been raised on this topic and, in particular, concerns have been noted with respect to percentage based measures in ecological research (Gordon, 1967). The present research was designed to test the geographic mobility hypothesis, not to explore the complexities of economic conditions and their possible effects on crime. Furthermore, our measures were limited by the available aggregate data for provinces. So although percent low income did not exhibit much effect net of other predictors, no general conclusions regarding the role of economic factors in provincial crime rates should as yet be

reached.

Substantial net time period effects were present, particularly for the two property crime categories. This is not surprising given the well documented increases in officially recorded crime in the last twenty to thirty years. But the fact that this net effect was the largest of any of the five predictors for these two crime categories suggests that the year variable is a surrogate for the influence of other unmeasured variables operating over this time period. For example, there has been a tremendous growth in the availability of consumer goods during these years and various technological improvements and changes in retailing practices have also increased their attractiveness as crime targets. Commercial, retail and residential facilities have proliferated and so have increased the number and variety of potential targets for break and enter, thefts and robbery. The phenomenal growth in the use of credit and credit cards has dramatically increased the opportunities for fraud. More female labour force participation may enhance both the motivations and opportunities for certain types of female crime. And the growth in the divorce rate has probably contributed to both a weakening of familial controls and supervision as well as to the growth in the number of households available as potential crime targets (Cohen and Felson, 1979). So without attempting a comprehensive list of the societal changes over these years, it should be clear that there are a number of such changes relevant to an understanding and explanation of the observed increases in provincial crime rates. Our inclusion of the time period measure is a way of collectively representing these changes without increasing the number of variables in the regression equation relative to the small number of cases (N=33) and since no reliable and valid aggregate time series data are available for a number of these changes. Therefore, the moderate to strong net migration effect is all the more impressive in view of what the time period variable likely represents.

An additional factor which has changed over time, with implications for the amount of officially recorded crime, is the criminal justice system. Nineteen sixty-two was the first year of operation of the Uniform Crime Reporting system in Canada and the number of police departments reporting and the efficiency and accuracy of their reports have undoubtedly increased since then, to say nothing of increased reporting by the public. These types of changes would also be represented by the time period variable. But we also included in our analysis the specific variable of the number of police per capita since this aspect of police resources might have a direct impact on the number of officially

recorded offences, as more police per capita means more police available to detect offences, respond to public complaints and engage in record keeping. Our regression results did indicate that the more police per capita in provinces the higher the crime rate net of other predictors, but only for violent personal crime and violent property crime.

At first glance this may seem strange since it is frequently assumed that more serious crime will be reported and recorded in any event and that an increase in police per capita would be devoted to the hitherto relatively ignored less serious crime. While this argument may have some validity (McDonald, 1969), we should not assume that all crimes of a violent, personal nature are serious. In fact, the most frequently recorded crime in this category is assault (88% in 1982), many acts of which are relatively minor without serious injury. So much of the effect of police per capita on violent crime could result from increased attention to minor assaults. Furthermore, some of this police per capita effect is a function of the very high violent crime and police per capita rates for the Northwest Territories/Yukon. Their rates on both variables for each year are by far the highest; in fact, they have the three highest rates on each variable across all provinces and time periods. The high rates of police per capita are probably largely due to the relatively small population in the region combined with a large geographic area to be policed. And a significant proportion of the violent crime is no doubt alcohol related. Break and enter constitutes around 90% of the violent property crime category and more police per capita may produce less "downgrading" (to theft, for example) and ignoring of reported offences to manipulate the clearance rate (Skolnick, 1966) due to the greater availability of police personnel for investigation and follow-up. And when police resources increase victims may be more likely to report, thereby increasing the known crime rate, leading to demands for more police and something of a vicious circle.

This research has demonstrated the importance of geographic mobility, along with a few other variables, in beginning to explain the regional pattern of variation in Canadian crime rates. Little research attention has been directed toward explaining these patterns compared, for example, to similar research in the United States. Clearly far more needs to be done before we can feel satisfied at having unravelled the social structural sources of such patterns.

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ENDNOTES

1. The specific crimes included within each type were, respectively: murder, manslaughter (both combined into homicide by 1982), attempted murder, rape and other sexual offences (combined into sexual offences by 1982); robbery and break and enter; car theft, theft over and under $50 (later $200), possession of stolen goods, fraud.

2. A smaller census is conducted every five years.

3. See note 1 for the list of specific offences contained within each category.

4. Hereafter, province includes the Northwest Territories and the Yukon unless otherwise indicated.

5. This finding can be verified through inspection of Table 1.

6. The removal criterion was a maximum F value of .055.

7. Table available from the author upon request.